

FREQUENCY MIXERS

Surface Mount

LEVEL 7 50 kHz to 12 GHz



ADE/ADEX

+7 dBm LO, up to +1 dBm RF

MODEL NO.	FREQUENCY MHz		CONVERSION LOSS dB				LO-RF ISOLATION dB				LO-IF ISOLATION dB				IP3@ center band Typ. (dBm)	E f a c t o r	CASE STYLE	CONNECTION	PCB Lay-out PL-	PRICE \$ Qty. (10-49)				
	LO/RF f_L-f_U	IF	Mid-Band - σ Max.	Total Range Max.	L Typ. Min.	M Typ. Min.	U Typ. Min.	L Typ. Min.	M Typ. Min.	U Typ. Min.														
ADE-1**	0.5-500	DC-500	5.0	.10	6.5	7.8	70	50	55	35	45	30	65	45	40	25	30	20	15	0.8	CD636	ht	052	1.99*
† ADE-1ASK**	2-600	DC-600	5.3	.10	6.5	7.5	55	45	50	30	40	25	50	40	45	24	35	18	16	0.9	CD542	ht	052	3.95
† ADE-2ASK**	1-1000	DC-1000	5.4	.10	6.8	9.5	55	45	45	30	36	20	50	40	32	22	22	12	12	0.5	CD542	ht	052	4.25
NEW ADE-2	5-1000	DC-1000	6.67	0.26	8.0	9.5	60	40	47	25	32	22	62	35	45	25	32	20	20	1.3	CD542	ht	052	1.99*
† ADE-3G**	2300-2700	DC-400	5.6	.10	—	7.0	36 (typ.) 25 (min.)			26 (typ.) 17 (min.)			13	0.6	CD542	ht	052	3.45						
ADE-3GL**	2100-2600	DC-600	6.0	.25	—	8.8	34 (typ.) 25 (min.)			20 (typ.) 7 (min.)			17	1.0	CD541	jw	051	4.95						
☆ ADE-4**	200-1000	DC-800	6.8	.10	8.5	8.5	60	45	53	40	45	30	45	30	40	22	35	20	15	0.8	CD542	ht	052	4.25
† ADE-5**	5-1500	DC-1000	6.6	.10	7.5	9.3	50	40	40	25	33	23	50	40	30	20	20	10	15	0.8	CD542	ht	052	3.45
ADE-6**	0.05-250	DC-200	4.6	.05	7.0	8.4	62	49	40	30	40	20	58	44	45	24	25	15	10	0.3	CD637	ht	052	4.95
ADE-11X**	10-2000	5-1000	7.1	.10	8.2	9.8	62	45	36	20	27	18	60	45	37	20	38	20	9	0.2	CD542	nd	052	1.99*
ADE-12**	50-1000	DC-1000	7.0	.15	8.0	9.0	40	25	—	—	33	22	44	26	—	—	37	20	17	1.0	CD541	jv	051	2.95
ADE-13**	50-1600	50-1000	8.1	.10	9.0	9.8	50	25	40	25	33	20	49	30	35	20	32	20	11	0.4	CD541	ju	051	3.10
ADE-14**	800-1000	DC-200	7.4	.20	—	8.9	32 (typ.) 22 (min.)			34 (typ.) 20 (min.)			17	1.0	CD541	jv	051	3.25						
ADE-18W**	1750-3500	DC-700	5.4	.30	8.9	8.9	33 (typ.) 20 (min.)			12 (typ.) 7 (min.)			11	0.4	CD542	jw	051	3.95						
ADE-20**	1500-2000	DC-300	5.4	.10	—	7.8	31 (typ.) 22 (min.)			28 (typ.) 20 (min.)			14	0.7	CD542	jv	051	4.95						
ADE-30**	200-3000	DC-1000	4.5	.20	9.0	9.8	35 (typ.) 20 (min.)			20 (typ.) 7 (min.)			14	0.7	CD542	ht	052	6.95						
ADE-30W**	300-4000	DC-950	6.8	.20	9.0	9.8	35 (typ.) 17 (min.)			16 (typ.) 7 (min.)			12	0.5	CD542	ht	052	8.95						
† ADE-35**	1600-3500	DC-1500	6.3	.50	—	9.8	25 (typ.) 16 (min.)			22 (typ.) 12 (min.)			11	0.4	CD542	jv	051	4.95						
ADE-901**	800-1000	DC-200	5.9	.10	—	7.3	32 (typ.) 22 (min.)			26 (typ.) 18 (min.)			13	0.6	CD542	jv	051	2.95						
NEW ADEX-10**	10-1000	DC-800	6.8	.10	7.8	8.3 ^{††}	80	55	60	40	47	37	40	26	33	20	24	13	16	0.9	CD542	ht	052	2.95

E= [IP3(dBm)-LO Power(dBm)]/10

L = low range [f_L to $10f_L$]

M = mid range [$10f_L$ to $f_U/2$]
m = mid band [$2f_L$ to $f_U/2$]

U = upper range [$f_U/2$ to f_U]

features

- low conversion loss, down to 4.9 dB typ.
- excellent isolation, up to 55 dB typ.
- IP3, up to 20 dBm typ.
- ultra low profile package
- solder plated leads for excellent solderability
- waterwash compatibility
- low cost

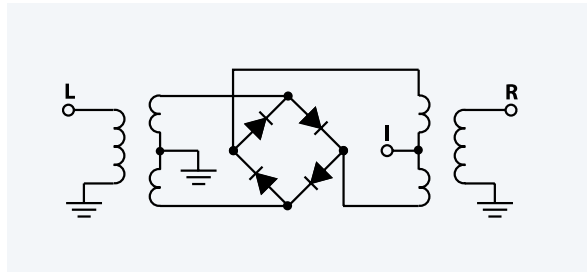
applications

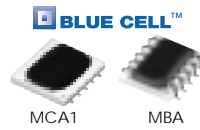
- cellular
- PCN
- ISM
- instrumentation
- wireless/VSAT systems
- PCMCIA cards

NOTES:

- ̄ Average of conversion loss at center of mid-band frequency ($f_L+f_U/4$)
- σ Standard deviation
- ◆ Aqueous washable
- † Phase detection, positive polarity.
- ☆ L=200-400 MHz M=400-500 MHz U=500-1000 MHz
- ^{††} Conversion loss increases 0.5 dB when IF is above 150 MHz.
- ‡ Conversion loss at 30 MHz IF, increases with IF frequency
- * Quantity 100
- * BLUE CELL™ mixers protected by U.S. Patents 5,534,830 5,640,132 5,640,134 5,640,699
- ** Protected under U.S. patent 6133525

- A. Environmental specifications and re-flow soldering information available in General Information Section.
- B. Units are non-hermetic unless otherwise noted. For details on case dimensions & finishes see "Case Styles & Outline Drawings".
- C. Prices and Specifications subject to change without notice.
- 1. Absolute maximum power, voltage and current ratings:
 - 1a. RF power 50mW
 - 1b. Peak IF current, 40mA





+7 dBm LO, up to +1 dBm RF

MODEL NO.	FREQUENCY MHz		CONVERSION LOSS dB		Total Range Max.	LO-RF ISOLATION dB		LO-IF ISOLATION dB		IP3@ center band Typ. (dBm)	E f a c t o r	CASE STYLE	CONNECTION	PCB Lay-out PL-	PRICE \$ Qty. (10-49)
	LO/RF f _L -f _U	IF	Mid-Band x m σ			Typ.	Min.	Typ.	Min.						
MBA-12*	800-2500	DC-500	7.5	.10	9.0	30	20	15	8	12	0.5	SM2	lc	065	5.95
MBA-591*	2800-5900	DC-1000	6.5	.10	9.0	36	20	26	17	10	0.3	SM2	le	067	6.95
MBA-671*	2400-6700	DC-1000	6.5	.10	9.2	36	20	26	17	10	0.3	SM2	le	067	8.95
MCA1-24*	300-2400	DC-700	6.1	0.1	8.9	40	25	25	15	10	0.3	DZ885	ld	045	5.95
MCA1-42*	1000-4200	DC-1500	6.1	0.1	8.9	35	23	20	12	10	0.3	DZ885	ld	045	6.95
MCA1-60*	1600-6000 1600-4400 4400-6000	DC-2000 DC-2000 DC-2000	6.3 6.2	0.2 0.3	8.3 [†] 8.5 [†]	32 23	20 17	17 18	— —	9 8	0.2 0.1	DZ885	ld	045	7.95
NEW MCA1-85*	2800-8500 2800-5000 5000-8500	DC-1250 DC-1250 DC-1250	5.5 5.7	0.2 0.2	8.1 [†] 8.2 [†]	40 35	20 20	13 40	9 20	13 8	0.6 0.1	DZ885	ld	045	8.95
NEW MCA1-12G*	3800-12000 3800-6500 6500-9500 9500-12000	DC-1800 DC-1800 DC-1800 DC-1800	5.4 6.2 6.0	0.2 0.1 0.2	8.3 [†] 8.0 [†] 8.5 [†]	32 38 26	18 25 18	13 40 21	8 23 17	11 8 10	0.4 0.1 0.3	DZ885	ld	045	10.95

E = [IP3(dBm)-LO Power(dBm)]/10

L = low range [f_L to 10f_L]

M = mid range [10f_L to f_U/2]
m = mid band [2f_L to f_U/2]

U = upper range [f_U/2 to f_U]

pin connections

see case style outline drawings

PORT	ju	jv	jw	ht	lc	ld	le	nd
LO	6	6	4	6	10	10	10	6
RF	3	4	6	3	5	5	6	2
IF	4	3	3	2	3	3	1	3
GND	1,2,5	1,2,5	1,2,5	1,4,5	1,4,7,8,9	all others	all others	1,4,5
ISOLATE	—	—	—	—	2,6	—	—	—
DEMO BOARD	TB-02	TB-02	TB-02	TB-03	TB-117	TB-99(MBA) TB-144 (MCA1)	TB-74	TB-03

NSN GUIDE
MCL NO.
ADE-13

NSN
5895-01-514-0619